Dean K. Matsuura
Manager
Regulatory Affairs

June 22, 2009

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PUBLIC UTILITIES
COMMISSION

The Honorable Chairman and Members of the
Hawaii Public Utilities Commission
Kekuanaoa Building, 1st Floor
465 South King Street
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Docket No. 2008-0303
Advanced Metering Infrastructure Project
HECO Companies' Responses to the Commission's Information Requests

The Commission submitted Information Requests ("IRs") prepared by the Commission's consultant, the National Regulatory Research Institute, by letter dated May 21, 2009 in the subject proceeding.

For reference purposes, the Hawaiian Electric Companies have renumbered the sixteen IRs as PUC IRs 1 to 16.[1]

Enclosed are the Hawaiian Electric Companies' responses to PUC-IRs 1 to 4, and 6 to 16. The Companies' response to the remaining IR (PUC-IR-5) will be submitted to the Commission shortly.

Very truly yours,

Enclosures

cc: Division of Consumer Advocacy
Henry Q Curtis (Life of the Land)
Warren S. Bollmeier II (HREA)
Mark Duda (HSEA)

[1] The "Hawaiian Electric Companies" are Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited.

PUC-IR-1

Ref: General Prudence; PUC-IR-I.1

Please provide a comprehensive cost-benefit analysis extending over the life of the project and incorporating direct and indirect costs and benefits of the AMI Project.

a. What are the expected total costs and benefits of the AMI Project through at least 2035? Please extend the tables on pages 9 and 10 of Exhibit 19 and on page 7 of Exhibit 22 outward to at least 2035.
b. Please quantify indirect benefits associated with the AMI Project, such as avoided capacity builds and reduced dispatch of peaking generators. What assumptions are included (e.g., mandatory TOU rates for certain customer classes)?
c. If the response to the questions above does not indicate that total benefits exceed total costs, please provide additional reasons why the Commission should approve this Application.

HECO Companies' Response:

a. In response to CA-IR-35, the Companies filed updates to the projected costs for the AMI Project by updating Exhibits 19, 21, and 22 of the Application. See Attachments 1 through 3 of the Companies' response to CA-IR-35.

As requested by this information request, the expected total costs and benefits of the AMI Project through 2035 are provided in Attachments 1 (revised Exhibit 19, Table 3) and 2 (revised Exhibit 19, Table 12) to this response (respectively). As requested, the AMI Expense (O&M) Costs through 2035 are also provided in Attachment 3 (revised Exhibit 19, Table 11) to this response. These Attachments include all known costs within that period. However, there are other factors which could impact the costs that have not been quantified. Two such factors are:

- The term of the Sensus Agreement is 15 years, from the effective date. The effective date is defined as the Commission Approval Order Date. The agreement contains provisions for annual extensions, but either party has the right to

terminate the agreement (with notice) at the end of the current term. Termination of the agreement, by either party, could significantly impact the costs presented within the Attachments to this response. The Companies have the right under Section 10 of the Sensus Agreement to purchase the AMI network. This could guarantee the continued operations for the system but would still result in variations to the costs presented within the Attachments to this response.

- As discussed in the Companies' response to CA-IR-26, the Companies currently expect that the useful life of the Sensus AMI meters will be approximately 15 years. However, the model does not reflect the potential requirement of a complete change out of all meters after 15 years of service. Instead, the model recognizes the need to replace some (1%) of the meter population each year.

b. All of the estimated AMI Benefits are presented in Attachment 2 to this response (Revised Exhibit 19, Table 12). No estimated benefits for avoided capacity build or reduced dispatch of peaking generators were established within the implementation of the AMI system. Future advanced rate programs such as Critical Peak Pricing and Dynamic Peak Pricing may provide these types of benefits. These benefits will be evaluated in future submittals for advanced pricing tariffs.

c. As shown in Attachments 1 (revised Exhibit 19, Table 3) and 2 (revised Exhibit 19, Table 12) to this response, total benefits does exceed total costs. Attachment 4 of the Companies' response to CA-IR-3 shows that the simple payback periods for HECO, MECO and HELCO are 13, 17, and 20 years respectively.

The AMI system will also provide intangible benefits which were neither quantified nor presented within Attachment 2 to this response. Section D.2 (page 45) of

the Application discusses the intangible benefits that the AMI System will support. AMI is a platform upon which future applications and programs will be built. The September/October 2007 issue of Electric Perspectives (a publication of the Edison Electric Institute) is provided as Attachment 2 to the Companies' response to CA-IR-3. Page 5 (68 in the publication) of Attachment 2 to the Companies' response to CA-IR-3, Figure 2 – "Smart Grid: Where Benefits Start", shows the improved benefits as these new programs are implemented. Attachment 3 to the Companies' response to CA-IR-3, Southern California Edison "Testimony Supporting Application For Approval of Advanced Metering Infrastructure Pre-Deployment Activities and Cost Recovery Mechanism, Volume 1 – Overview of SCE's AMI Deployment Strategy and Objectives, Section II, page 4 demonstrates the need for additional programs such as Net Price Response and Net Load Control to achieve benefits which exceed costs.

Exhibit 19, Table 1 - All AMI Project Costs (in $000s)

ALL COSTS - IMPLEMENTATION & OPERATING (in $000s)		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	TOTAL
HECO	Proj Mgmt	$843	$869	$896	$915	$935	$954	$975	$996	$1,017	$1,039	$1,062	$1,086	$1,110	$1,135	$1,161	$1,188	$1,215	$1,243	$1,272	$1,302	$1,333	$1,365	$1,398	$1,432	$1,466	$1,502	$29,709
	Meters	$0	$15,901	$16,259	$17,060	$703	$765	$791	$810	$820	$832	$843	$856	$867	$880	$892	$923	$956	$991	$1,027	$1,063	$1,102	$1,142	$1,185	$1,228	$1,272	$1,319	$70,487
	MDMS	$5,668	$4,647	$1,615	$533	$388	$746	$13,597	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$27,194
	Network	$252	$352	$621	$932	$914	$948	$970	$1,006	$1,044	$1,083	$1,124	$1,169	$1,212	$1,258	$1,305	$1,354	$1,408	$1,460	$1,516	$1,572	$1,632	$1,696	$1,760	$1,827	$1,895	$2,970	$33,280
	Total	$6,763	$21,769	$19,391	$19,440	$2,940	$3,413	$16,333	$2,812	$2,881	$2,954	$3,029	$3,111	$3,189	$3,273	$3,358	$3,465	$3,579	$3,694	$3,815	$3,937	$4,067	$4,203	$4,343	$4,487	$4,633	$5,791	$160,670
MECO	Proj Mgmt	$289	$298	$342	$597	$817	$544	$555	$566	$572	$584	$596	$608	$621	$635	$648	$662	$677	$692	$707	$723	$740	$757	$774	$792	$810	$829	$16,435
	Meters	$0	$0	$0	$0	$12,425	$276	$327	$336	$344	$351	$359	$366	$375	$382	$392	$407	$423	$442	$459	$479	$499	$519	$541	$565	$588	$613	$21,468
	MDMS	$1,255	$1,029	$358	$118	$86	$165	$3,011	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,022
	Network	$12	$3	$3	$3	$271	$213	$220	$230	$241	$254	$264	$276	$289	$302	$318	$331	$346	$363	$380	$399	$416	$435	$455	$477	$501	$544	$7,546
	Total	$1,556	$1,330	$703	$718	$13,599	$1,198	$4,113	$1,132	$1,157	$1,189	$1,219	$1,250	$1,285	$1,319	$1,358	$1,400	$1,446	$1,497	$1,546	$1,601	$1,655	$1,711	$1,770	$1,834	$1,899	$1,986	$51,471
HELCO	Proj Mgmt	$289	$285	$317	$275	$541	$555	$570	$585	$595	$611	$627	$644	$662	$680	$699	$719	$740	$761	$783	$806	$830	$854	$880	$906	$934	$962	$17,110
	Meters	$0	$0	$0	$0	$0	$15,965	$402	$467	$480	$492	$503	$515	$530	$543	$556	$582	$607	$636	$665	$695	$726	$758	$794	$831	$869	$909	$28,525
	MDMS	$1,481	$1,214	$422	$139	$101	$195	$3,552	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,104
	Network	$14	$4	$4	$4	$4	$387	$296	$311	$327	$343	$363	$379	$398	$418	$440	$464	$485	$510	$536	$563	$593	$621	$653	$686	$720	$759	$10,282
	Total	$1,784	$1,503	$743	$418	$646	$17,102	$4,820	$1,363	$1,402	$1,446	$1,493	$1,538	$1,590	$1,641	$1,695	$1,765	$1,832	$1,907	$1,984	$2,064	$2,149	$2,233	$2,327	$2,423	$2,523	$2,630	$63,021
TOTAL	Proj Mgmt	$1,421	$1,452	$1,555	$1,787	$2,293	$2,053	$2,100	$2,147	$2,184	$2,234	$2,285	$2,338	$2,393	$2,450	$2,508	$2,569	$2,632	$2,696	$2,762	$2,831	$2,903	$2,976	$3,052	$3,130	$3,210	$3,293	$63,254
	Meters	$0	$15,901	$16,259	$17,060	$13,128	$17,006	$1,520	$1,613	$1,644	$1,675	$1,705	$1,737	$1,772	$1,805	$1,840	$1,912	$1,986	$2,069	$2,151	$2,237	$2,327	$2,419	$2,520	$2,624	$2,729	$2,841	$120,480
	MDMS	$8,404	$6,890	$2,395	$790	$575	$1,106	$20,160	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$40,320
	Network	$278	$359	$628	$939	$1,189	$1,548	$1,486	$1,547	$1,612	$1,680	$1,751	$1,824	$1,899	$1,978	$2,063	$2,149	$2,239	$2,333	$2,432	$2,534	$2,641	$2,752	$2,868	$2,990	$3,116	$4,273	$51,108
	Total	$10,103	$24,602	$20,837	$20,576	$17,185	$21,713	$25,266	$5,307	$5,440	$5,589	$5,741	$5,899	$6,064	$6,233	$6,411	$6,630	$6,857	$7,098	$7,345	$7,602	$7,871	$8,147	$8,440	$8,744	$9,055	$10,407	$275,162

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Exhibit 19, Table 12 - AMI Quantifiable Benefits (in $000s)

QUANTIFIABLE BENEFITS (in $000s)			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	TOTAL
(1) O&M Reduction	Meter Reading Savings	HECO	-	-	1,164	2,448	3,430	3,533	3,639	3,748	3,878	3,994	4,114	4,237	4,382	4,514	4,649	4,808	4,952	5,100	5,253	5,431	5,594	5,762	5,794	5,968	6,147	6,357	108,896
		MECO	-	-	-	-	-	1,000	1,030	1,061	1,093	1,126	1,014	1,075	1,107	1,140	1,174	1,210	1,274	1,312	1,352	1,392	1,434	1,477	1,521	1,567	1,614	1,662	26,635
		HELCO	-	-	-	-	-	-	800	824	849	874	915	942	970	1,000	1,043	1,075	1,107	1,140	1,188	1,224	1,163	1,217	1,254	1,291	1,349	1,389	21,614
		Total	-	-	1,164	2,448	3,430	4,533	5,469	5,633	5,820	5,994	6,043	6,254	6,459	6,654	6,866	7,093	7,333	7,552	7,793	8,047	8,191	8,456	8,569	8,826	9,110	9,408	157,145
	Field Service Savings	HECO	-	165	339	526	1,084	1,116	1,150	1,184	1,220	1,257	1,294	1,333	1,373	1,414	1,457	1,500	1,545	1,592	1,640	1,689	1,739	1,792	1,845	1,901	1,958	2,017	34,130
		MECO	-	-	-	-	178	367	378	389	401	413	425	438	451	465	478	493	508	523	539	555	571	588	606	624	643	662	10,695
		HELCO	-	-	-	-	-	220	453	467	481	495	510	526	541	558	574	592	609	628	646	666	686	706	728	749	772	795	12,402
		Total	-	165	339	526	1,262	1,703	1,981	2,040	2,102	2,165	2,229	2,297	2,365	2,437	2,509	2,585	2,662	2,743	2,825	2,910	2,996	3,086	3,179	3,274	3,373	3,474	57,227
Customer Benefit	Theft of Electricity Savings	HECO	-	290	886	1,493	1,813	1,831	1,849	1,868	1,886	1,905	1,924	1,944	1,963	1,983	2,003	2,023	2,043	2,063	2,084	2,105	2,126	2,147	2,168	2,190	2,212	2,234	47,033
		MECO	-	-	-	-	224	454	462	469	477	485	492	500	508	517	525	534	542	551	560	569	578	587	597	607	616	626	11,480
		HELCO	-	-	-	-	260	529	540	550	561	572	583	595	606	618	630	643	655	668	681	695	708	722	736	751	765	780	13,848
		Total	-	290	886	1,493	2,297	2,814	2,851	2,887	2,924	2,962	2,999	3,039	3,077	3,118	3,158	3,200	3,240	3,282	3,325	3,369	3,412	3,456	3,501	3,548	3,593	3,640	72,361
	Accuracy of Meter Savings	HECO	276	846	1,425	1,730	1,747	1,764	1,782	1,800	1,818	1,836	1,854	1,873	1,892	1,911	1,930	1,949	1,968	1,988	2,008	2,028	2,048	2,069	2,089	2,110	2,131	2,153	47,025
		MECO	-	-	-	-	243	494	502	510	519	527	536	544	553	562	571	580	590	599	609	619	629	639	649	660	670	681	12,486
		HELCO	-	-	-	-	-	317	646	659	672	685	698	712	726	740	755	769	784	800	816	831	848	864	881	899	916	934	15,952
		Total	276	846	1,425	1,730	1,990	2,575	2,930	2,969	3,009	3,048	3,088	3,129	3,171	3,213	3,256	3,298	3,342	3,387	3,433	3,478	3,525	3,572	3,619	3,669	3,717	3,768	75,463
Future Capital Reduction	Meter Capital Savings	HECO	-	421	524	637	714	751	791	834	879	928	979	1,034	1,093	1,156	1,224	1,296	1,373	1,455	1,544	1,639	1,741	1,850	1,967	2,093	2,229	2,375	31,527
		MECO	-	-	-	-	179	218	231	244	259	274	291	308	327	348	369	393	418	445	474	505	538	574	612	654	699	747	9,107
		HELCO	-	-	-	-	-	238	286	302	320	339	359	380	403	428	453	481	511	542	576	612	651	692	736	784	835	889	10,817
		Total	-	421	524	637	893	1,207	1,308	1,380	1,458	1,541	1,629	1,722	1,823	1,932	2,046	2,170	2,302	2,442	2,594	2,756	2,930	3,116	3,315	3,531	3,763	4,011	51,451
TOTAL QUANTIFIABLE BENEFITS		HECO	276	1,722	4,338	6,834	8,788	8,995	9,211	9,434	9,681	9,920	10,165	10,421	10,703	10,978	11,263	11,576	11,881	12,198	12,529	12,892	13,248	13,620	13,863	14,262	14,677	15,136	268,611
		MECO	-	-	-	-	824	2,533	2,603	2,673	2,749	2,825	2,758	2,865	2,946	3,032	3,117	3,210	3,332	3,430	3,534	3,640	3,750	3,865	3,985	4,112	4,242	4,378	70,403
		HELCO	-	-	-	-	260	1,304	2,725	2,802	2,883	2,965	3,065	3,155	3,246	3,344	3,455	3,560	3,666	3,778	3,907	4,028	4,056	4,201	4,335	4,474	4,637	4,787	74,633
		Total	276	1,722	4,338	6,834	9,872	12,832	14,539	14,909	15,313	15,710	15,988	16,441	16,895	17,354	17,835	18,346	18,879	19,406	19,970	20,560	21,054	21,686	22,183	22,848	23,556	24,301	413,647

(1) Only O&M Reduction Benefits flow through the Surcharge

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Exhibit 19, Table 11 - AMI Expense Costs (in $000)

EXPENSE COSTS (in $000s)		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	TOTAL
Project Management																											
Project Management	HECO	843	869	896	915	935	954	975	996	1,017	1,039	1,062	1,086	1,110	1,135	1,161	1,188	1,215	1,243	1,272	1,302	1,333	1,365	1,398	1,432	1,466	28,207
	MECO	289	298	342	597	817	544	555	566	572	584	596	608	621	635	648	662	677	692	707	723	740	757	774	792	810	15,606
	HELCO	289	285	317	275	541	555	570	585	595	611	627	644	662	680	699	719	740	761	783	806	830	854	880	906	934	16,148
	Total	**1,421**	**1,452**	**1,555**	**1,787**	**2,293**	**2,053**	**2,100**	**2,147**	**2,184**	**2,234**	**2,285**	**2,338**	**2,393**	**2,450**	**2,508**	**2,569**	**2,632**	**2,696**	**2,762**	**2,831**	**2,903**	**2,976**	**3,052**	**3,130**	**3,210**	**59,961**
Meters																											
Replacing Damaged Meter Sockets	HECO	-	2,519	2,614	2,776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,909
	MECO	-	-	-	-	1,809	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,809
	HELCO	-	-	-	-	-	*2,715*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2,715*
	Total	**-**	**2,519**	**2,614**	**2,776**	**1,809**	**2,715**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	12,433
MDMS Development & Implementation																											
Training, Process & Change Management	HECO	540	539	137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,216
	MECO	120	120	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270
	HELCO	141	141	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	318
	Total	**801**	**800**	**203**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	1,804
Support & Maintenance	HECO	244	400	407	380	388	402	414	423	432	441	458	474	484	496	507	528	547	561	575	590	616	639	656	674	693	12,429
	MECO	54	89	90	84	86	89	92	94	96	98	102	105	107	110	112	117	121	124	127	131	136	142	145	149	154	2,754
	HELCO	64	104	106	99	101	105	108	110	113	115	120	124	126	129	132	138	143	146	150	154	161	167	171	176	181	3,243
	Total	**362**	**593**	**603**	**563**	**575**	**596**	**614**	**627**	**641**	**654**	**680**	**703**	**717**	**735**	**751**	**783**	**811**	**831**	**852**	**875**	**913**	**948**	**972**	**999**	**1,028**	18,426
AMI Communications Network																											
Sensus FlexNet Network	HECO	198	268	554	865	898	932	968	1,005	1,043	1,083	1,124	1,167	1,211	1,257	1,305	1,354	1,406	1,459	1,515	1,572	1,632	1,694	1,759	1,826	1,895	29,990
	MECO	-	-	-	-	*200*	*210*	*220*	*230*	*241*	*252*	*264*	*276*	*289*	*302*	*316*	*331*	*346*	*363*	*380*	*397*	*416*	*435*	*455*	*477*	*499*	*6,899*
	HELCO	-	-	-	-	-	282	296	311	327	343	361	379	398	418	440	462	485	510	536	563	591	621	653	686	720	9,382
	Total	**198**	**268**	**554**	**865**	**1,098**	**1,424**	**1,484**	**1,546**	**1,611**	**1,678**	**1,749**	**1,822**	**1,898**	**1,977**	**2,061**	**2,147**	**2,237**	**2,332**	**2,431**	**2,532**	**2,639**	**2,750**	**2,867**	**2,989**	**3,114**	46,271
Sensus Additional Options	HECO	54	16	16	16	16	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134
	MECO	12	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
	HELCO	14	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34
	Total	**80**	**23**	**23**	**23**	**23**	**23**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	195
TOTAL EXPENSED	HECO	1,879	4,611	4,624	4,952	2,237	2,304	2,357	2,424	2,492	2,563	2,644	2,727	2,805	2,888	2,973	3,070	3,168	3,263	3,362	3,464	3,581	3,698	3,813	3,932	4,054	79,885
	MECO	475	510	465	684	2,915	846	867	890	909	934	962	989	1,017	1,047	1,076	1,110	1,144	1,179	1,214	1,251	1,292	1,334	1,374	1,418	1,463	27,365
	HELCO	508	534	463	378	646	3,661	974	1,006	1,035	1,069	1,108	1,147	1,186	1,227	1,271	1,319	1,368	1,417	1,469	1,523	1,582	1,642	1,704	1,768	1,835	31,840
	Total	**2,862**	**5,655**	**5,552**	**6,014**	**5,798**	**6,811**	**4,198**	**4,320**	**4,436**	**4,566**	**4,714**	**4,863**	**5,008**	**5,162**	**5,320**	**5,499**	**5,680**	**5,859**	**6,045**	**6,238**	**6,455**	**6,674**	**6,891**	**7,118**	**7,352**	139,090

PUC-IR-1
DOCKET NO. 2008-0303
ATTACHMENT 3
PAGE 1 OF 1

PUC-IR-2

Ref: General Prudence; PUC-IR-I.2.

To what extent does allowing customer choice regarding TOU rates mitigate the potential benefits of the AMI Project? Specifically, might there be self-selection of customers who already primarily consume power in off-peak times into the TOU rate program and what would be the consequences of such a dynamic? Have pilot projects in Hawaii or elsewhere explored this issue and, if so, what conclusions did they make?

HECO Companies' Response:

The HECO Companies' request to offer advanced meters to all customers who request them and to assign optional TOU rates to these customers before the completion of a general AMI rollout should advance the opportunity to realize certain benefits of the AMI Project. TOU customers can realize bill savings and reduce overall peak electricity demand by modifying consumption patterns. There may be self-selection of some customers into TOU rate options who primarily consume power in off-peak periods; those customers will realize bill savings and their utility companies will experience revenue shortfalls in the same amounts. Many of the existing HECO Companies' commercial customers who primarily consume power in off-peak periods already are served under existing TOU rate options. However, the TOU rate options proposed in this docket are designed to benefit those customers who modify their consumption patterns and reduce priority peak and on-peak consumption; by contrast the proposed TOU rate options are also designed to yield higher bills for customers who do not modify their consumption patterns.

The HECO Companies are not aware of any pilot programs that have explicitly explored the issue of self-selection of customers who already primarily consume power in off-peak times into TOU rates.

PUC-IR-3

Ref: General Prudence; PUC-IR-I.3

Beyond their potential to reduce peak demand, what are the anticipated economic, reliability, and environmental benefits of TOU rates? Please provide estimates of the scale of such benefits.

HECO Companies' Response:

The Companies have not investigated economic, reliability, and environmental benefits of time-of-use (TOU) rates in the AMI application. In general, the optional TOU rates encourage customers to shift their consumption to non-peak periods. In Hawaii, the reduction in electricity demand during peak periods should increase reliability while the shifting of consumption to off-peak periods would have positive environmental benefits, to the extent that off-peak electricity is supplied by a higher percentage of renewable generation than on-peak consumption. To the extent that reduced on-peak consumption reduces system losses and allows more efficient power generation, we would expect changes in consumption patterns in response to optional TOU rates to improve the Companies' overall efficiency. In the case of TOU and AMI, the Companies would expect that a customer's improved awareness of electricity consumption (both in terms of quantity and time of day) will create positive environmental impacts, similar to what operators of both hybrid electric vehicles and conventional vehicles equipped with miles per gallon readouts experience. Shifting consumption patterns also reduces the demand on the electric grid. Demand response programs, which would be enabled by AMI, have also been shown to provide a modest conservation effect (see page 33 footnote in Docket 2008-0303).

See the Companies' response to HSEA-HREA-IR-1.

PUC-IR-4

Ref: General Prudence; PUC-IR-I.4

How might the AMI Project affect the integration of intermittent renewable resources, such as wind and solar generation? Specifically, would enhanced reliability benefits of AMI facilitate the integration of additional renewable energy resources? If so, please quantify how much additional intermittent resources are likely to be facilitated by the AMI Project.

HECO Companies' Response:

AMI refers to systems that measure, collect and analyze energy usage, from advanced devices such as electricity meters, gas meters, and/or water meters, through various communication media on request or on a pre-defined schedule. This infrastructure includes hardware, software, communications, customer associated systems and meter data management software.

The network between the measurement devices and business systems allows collection and distribution of information for customers, suppliers, utilities and service providers. This enables them to either participate in, or provide, demand response solutions, products and services. The proposed AMI project provides two way communications for both the utility and the customer.

In addition, installation of the AMI platform will enable the future implementation of dynamic response programs and smart grid initiatives. HECO has two existing demand-side management ("DSM") load management (demand response) programs, (1) the Commercial and Industrial Direct Load Control ("CIDLC") Program and (2) the Residential Direct Load Control ("RDLC") Program, which reduce load through direct control of load control switches installed on customer appliances. In return for allowing these load control switches to be installed, program participants are paid an incentive. These switches are activated when system frequency drops to predetermined levels and interrupt customer loads. (System frequency drops when

aggregate customer demand is higher than the output that electricity generators on-line are able to provide.) If the amount of load reduced restores the balance between customer load and the supply of generation, the system stabilizes. These switches can also be activated if HECO anticipates in advance that it will have difficulty meeting the demand. The switches are restored to their original state once the low frequency period is over.

The Company intends to explore the extent to which properly designed direct load control measures can assist in providing the substantial ancillary services that will be required to integrate substantial amounts of intermittent, fluctuating renewable electrical energy (such as that generated from wind farms) into its system. For example, one of the most important issues will be managing the system impacts (including frequency impacts) from large wind farms of sustained ramp down events that could occur when the wind drops. Such events could potentially be managed through a combination of resources such as increased spinning reserves, and on-site battery energy storage systems that slow the rate of the ramp down events, as well as direct load control resources, other load management resources, and distributed standby generation in the event the magnitude of the sustained ramp down exceeds the on-line reserves. See discussion of the Maui Electrical System Analysis and the Oahu Electrical System Analysis on pages 32 to 37 of Mr. Bruce Tamashiro's (HECO T-14) testimony filed in Docket No. 2008-0083 and the Company's response to CA-IR-48 of Docket No. 2008-0083. AMI would facilitate the acquisition of the additional load management resources as they develop.

Further, AMI communication and smart metering infrastructure can provide a foundation for the implementation of Smart Grid technology, which combines intelligent electronic devices (i.e., smart relays and distribution automation devices) and advanced applications that utilize timely data on customer loads and voltages through AMI and potential load reductions through

demand response. It provides capabilities in monitoring, controlling, optimizing and automating the restoration of the electric power delivery system.

The Companies expect the AMI system to support the integration of intermittent renewable resources. The Companies are currently performing grid integration studies to determine the maximum blend of renewable energy sources that can be safely integrated into their systems. These studies will be further described in the Big Wind Implementation Studies application the Company expects to file soon.

In light of the rapid escalation in Smart Grid activities and vendor developments related to the Smart Grid, HECO established a Smart Grid task force and initiated preliminary Smart Grid roadmapping activities shortly thereafter. With the availability of American Reinvestment and Recovery Act ("ARRA") funds, this effort has been accelerated. An RFP for competitive selection of a Smart Grid consultant will be issued in mid-2009 after the detailed work scope for this work is completed. An important facet of this due diligence work by the Companies is to assess the interaction between AMI and the Smart Grid to ensure that the selected technology is implemented adequately for the long term.

PUC-IR-6

Ref: Technology and Implementation; PUC-IR-II.2

According to page 4 of the filing, "[t]he AMI project will replace approximately 95-96% of commercial, industrial, and residential meters with AMI meters." Why does the AMI Project not replace 100% of existing meters for each of the HECO Companies?

HECO Companies' Response:

The proposed AMI network is able to provide network coverage for 95% of the customers on Oahu, and 96% of the customers on the islands of Maui and Hawaii. No AMI network is able to cost effectively provide coverage for 100% of the Companies' customers. As a result, for customers that are situated in areas without AMI network coverage, the Companies had not planned to install an AMI meter. However, as stated in the Companies' response to CA-IR-1 and CA-IR-22, the Companies would like to update their Application to allow AMI meters to be installed for all customers so that the maximum number of customers would benefit from participation in TOU programs. This higher quantity of AMI meters would not represent 100% of the Companies' meter population because existing MV90 meters would remain in place. MV90 meters are connected with telephone lines (either dedicated or shared) provided by the customers and capture interval data reliably. In some cases, MV90 meters are the best solution for a particular customer site due to wireless coverage limitations. Customers without AMI network coverage may also benefit in the future from an in-home display that communicates directly with the AMI meter to provide interval data.

PUC-IR-7

Ref: Technology and Implementation; PUC-IR-II.3

What effect does the AMI program have on the HECO Companies' work force? Please quantify the total employee headcount reduction that will take place annually and upon the completion of the AMI project.

HECO Companies' Response:

Workforce reductions would occur in the areas of meter reading and field services. These reductions would not be immediate, but rather are expected to be realized at the respective HECO Companies in the year following the installation of the meters. In the Companies' response to CA-IR-6, Attachment 1, and CA-IR-36, Attachment 2, the Companies' estimated meter reading and field service staff reductions were provided, respectively.

Implementation of the AMI system will require additional man-power (base labor) to be assigned to the AMI project. Attachment 1 provides the estimated additional manpower needed.

Estimated Additional New AMI Employees

Posistion	Count	Start Year
[1] HELCO AMI Project Manager	1	2010
[2] MECO AMI Project Manager	1	2010
[3] HECO AMI Data Analyst	2	2010
[4] MECO AMI Data Analyst	1	2013
[5] HELCO AMI Data Analyst	1	2014

[1] CA-IR-2, Attachment 1 & 2, Section VI.A.7
[2] CA-IR-2, Attachment 1 & 2, Section VI.A.8
[3] CA-IR-2, Attachment 1 & 2, Section VI.E.15
[4] CA-IR-2, Attachment 1 & 2, Section VI.E.5
[5] CA-IR-2, Attachment 1 & 2, Section VI.E.1

PUC-IR-8

Ref: Cost Recovery; PUC-IR-III.1.

According to page 1 of Exhibit 24 of the Application, the HECO Companies propose to recover the costs of new AMI meters over seven years. Please provide precedents from the FERC or other state commissions demonstrating that seven years is a just and reasonable recovery period? Please consider recent findings by the California PUC and the Emergency Economic Stabilization Act of October 3, 2008. Also provide a full and detailed narrative explanation demonstrating that seven years is a just and reasonable depreciation period for the costs of new AMI meters.

HECO Companies' Response:

As described in Exhibit 23, pages 4-5, and in response to CA-IR-441 in Docket No. 2008-0083, HECO's 2009 test year rate case, the FERC, in Order 679, identified accelerated depreciation as a viable mechanism to encourage investment as it provides improved cash flow and better positions public utilities for longer-term transmission investments. In addition, FERC has stated that it will consider depreciable lives of less than 15 years because shorter depreciation periods may be appropriate in certain cases.

Congress recognized that the depreciable lives for AMI assets are substantially shorter than current electric meter depreciation. The Emergency Economic Stabilization Act of October 3, 2008 allows an accelerated 10-year recovery period for the depreciation of qualified smart electric meters and smart electric grid systems for tax purposes. Also discussed in Exhibit 23, page 5, is the Clean Renewable Energy and Conservation Tax Act, H.R. 2776, 110th Cong. (2007) that sought to allow for a seven year recovery period for the depreciation of qualified energy management devices for tax purposes, which would apply to advanced meters.

The Companies are seeking a seven year recovery period for the investment in the new AMI meters. As described in Exhibit 24, page 2, recovery over this period will provide

improved cash flow and better position the Companies for future investment in advanced AMI-related technologies. The Companies evaluated several scenarios with different recovery periods. The impact on the Companies budget and financing plan, as well as the potential impact on ratepayers, was considered. A seven year recovery period was found to be the period of time which provided the Company a reasonable opportunity to recover its investment in a timely manner, provide cashflow to support other investment in the later years of the project and also fit the Companies' future financing plans. While the impact to ratepayers is not insignificant, this seven year period helped smooth out the revenue requirement and lessen the impact to ratepayers in any single year (as compared to a shorter recovery period), while at the same time, providing the Companies an opportunity to recover their investment in a more timely so as to further facilitate pursuit of the various initiatives that the HECO Companies and the State have agreed to undertake in their October 20, 2008 Energy Agreement.

To clarify, the HECO Companies propose to recover the costs of the new AMI meters over a seven year period. However for financial reporting purposes, the new AMI meters will be depreciated over the Commission approved depreciation rates. In regard to the investment in the AMI meters in this instance, the recovery period and depreciation period are separate and distinct. Please see Exhibit 24, pages 1-3 for further description.

PUC-IR-9

Ref: Cost Recovery; PUC-IR-III.2.

On page 5 of Exhibit 24 of the Application, the HECO Companies propose to recover the remaining book value of existing meters over three years for HECO and over the period of time between the Commission's Decision and Order and the start of meter installation for MECO and HELCO.

a. Please provide precedents from the FERC or other state commissions demonstrating that three years is a just and reasonable recovery period? Please consider the PUC Staff comments in the ongoing Case No. IPC-E-08-16 before the Idaho PUC. Also provide a full and detailed narrative explanation demonstrating that three years is a just and reasonable recovery period.

b. On what grounds is it just and reasonable for the existing meters for MECO, HELCO and potentially HECO to be fully depreciated using accelerated depreciation *before,* rather than *as* or *after* the advanced meters are installed?

HECO Companies' Response:

a. As noted in Exhibit 23, page 4, FERC, in Order 679, identified accelerated depreciation as a viable mechanism to encourage investment in transmission infrastructure because it provides improved cash flow and better positions public utilities for longer-term transmission investments. Accordingly, FERC has stated that it will consider, on a case-by-case basis, depreciable lives of less than 15 years because shorter depreciable lives may be appropriate in certain cases, such as advanced technologies for which the useful life is not necessarily known.

Also discussed in Exhibit 23, page 2, the Public Utility Commission of the State of Oregon ("OPUC") approved Portland General Electric's AMI tariff application on May 5, 2008 that included the accelerated depreciation of existing metering equipment prior to the retirement of such equipment over the two and a half year period between July 1, 2007 and December 31, 2009.

In Order No. 08-614 UE 202, issued December 30, 2008, the OPUC adopted a stipulation agreed to by the Idaho Power Company and the OPUC Staff that allows Idaho Power to "accelerate the depreciation of the net plant value of its existing metering equipment using a straight line depreciation method over an eighteen (18) month period starting on January 1, 2009, and ending June 30, 2010."

The Companies are seeking to accelerate recovery of their investment in the existing non-AMI meters on a straight-line basis beginning with the receipt of the Commission Decision and Order in this docket. HECO proposes recovery over a three-year period (which is twice as long as the period approved by the OPUC in Order No. 08-614 UE 202). MECO and HELCO propose recovery over a period beginning upon receipt of the Commission Decision and Order in this docket and ending when meter installation begins at each Company. For MECO that is 2014 and HELCO is 2015. Similar to the accelerated recovery proposed for the new AMI meters as discussed in response to PUC-IR-8, accelerated recovery over this period will provide improved cash flow and better position the Companies for the AMI meter investment and future investment in advanced AMI-related technologies.

The Companies evaluated several scenarios with different recovery periods. The impact on the Companies' budget and financing plan, as well as the potential impact on ratepayers, was considered. The recovery periods for each Company as previously described, in conjunction with the seven year recovery period for the new AMI meters, was found to be the period of time which provided the Companies a reasonable opportunity to recover their investment in a timely manner, provide cashflow to support the investment in the AMI project in the later years of the project and also fit the

Companies future financing plans. While the impact to ratepayers is not insignificant, this period helped smooth out the revenue requirement and lessen the impact to ratepayers in any single year (as compared to a shorter recovery period), while at the same time, providing the Companies an opportunity to recover its investment in a timely manner and pursue other initiatives set forth in the Energy Agreement.

b. To clarify, the HECO Companies propose to recover its investment in the existing non-AMI meters over a three to five year period. However for financial reporting purposes, the existing non-AMI meters will continue to be depreciated over the Commission approved depreciation rates. In regard to the investment in the existing non-AMI meters in this instance, the recovery period and depreciation period are separate and distinct. Please see Exhibit 24, pages 3-7 for further description.

Recovery during these periods as described, is reasonable as the existing non-AMI meters are still in service and considered "used and useful" for utility purposes. Prior to being replaced, these meters will still be installed at customer locations and still be operating and serving their purposes. The Companies' proposal ensures recovery of and on their investment in these utility assets while they are still in service. In effect, the proposal for recovery over an accelerated period recognizes that these meters will be replaced in the near term and that recovery will be over the approximate remaining useful life. Recovery during this time period provides a more accurate matching of recovery of the investment in the asset with the remaining period of use. It is reasonable and fair to ask ratepayers for recovery of an asset while it is still in use, rather than after or during a period when it has been replaced and is no longer "used and useful".

PUC-IR-10

Ref: Cost Recovery; PUC-IR-III.3

On page 8 of Exhibit 24 of the Application, the HECO Companies propose to defer certain software development costs associated with the MDMS, accumulate AFUDC on the deferred costs, amortize the deferred costs over 12 years, and include the unamortized costs in rate base. Based on this proposal:

a. Should software development costs be deferred and amortized, expensed immediately, or expensed with the cost recovery spread over multiple years? How have software development costs been treated by other state commissions and the FERC?

b. Is 12 years a just and reasonable amortization period for software development costs? Over what period have software development costs been amortized in the past by the Hawaii PUC, other state commissions, and the FERC? Also provide a full and detailed narrative explanation demonstrating that 12 years is a just and reasonable depreciation period for software development costs.

HECO Companies Response:

a. In Decision and Order No. 18365, filed February 8, 2001 in Docket No. 99-0207 (HELCO's 2000 test year rate case), the Commission ruled that its pre-approval is required before any computer software development project costs can be deferred and amortized for ratemaking purposes. In accordance with this ruling, the HECO Companies are seeking approval in this docket to defer and amortize, for ratemaking purposes, computer software development project costs. Without Commission approval, HECO will be required to expense such costs as incurred. As discussed on pages 7 through 11 of Exhibit 24 of the Application, the HECO Companies' accounting policy on software development costs is consistent with the American Institute of Certified Public Accountants' ("AICPA") Statement of Position 98-1 (SOP 98-1) – Accounting for the Costs of Computer Software Developed or Obtained for Internal Use, issued in March 1998, and Emerging Issues Task Force ("EITF") Issue 97-13 – Accounting for Costs Incurred in Connection with a Consulting Contract or an Internal Project that Combines Business Process Reengineering and Information Technology

Transformation, discussed by the EITF on November 20, 1997. The HECO Companies' proposed treatment, if approved, will be consistent with its accounting policy on software development costs and the ratemaking treatments approved by the Commission for the Customer Information System ("CIS")[1], Outage Management System ("OMS")[2] and Human Resource Management System ("HRMS")[3] projects. The HECO Companies are not aware of how software development costs have been treated by other state commissions and the FERC.

b. Under the accounting guidance of SOP 98-1, the amortization period for software development costs should be the expected useful life of the developed software. As the MDMS software has not yet been selected, the expected useful life of the MDMS software has not been estimated. It is anticipated that the expected useful life may be less than 12 years due to the rapid pace of technological change. However, the expected useful life will not be determined until the RFP and vendor selection process.

The Companies are proposing a 12-year amortization period, which is consistent with the approved amortization periods of the Companies' other deferred software development projects. For example, as described on page 10 of Exhibit 24 of the Application, the Companies had estimated that the expected useful life of the CIS project would be 10 years. However, the Companies agreed to amortize the project over a 12-year period, which the Commission included in D&O 21798. Similarly, the expected useful lives of the OMS and HRMS projects were estimated at 10 and 7 years, respectively, but the Companies agreed to a 12-year amortization period for both projects. Accordingly, the

[1] See Decision and Order No. 21798, Docket No. 04-0268, issued May 3, 2005 ("D&O 21798").
[2] See Decision and Order No. 21899, Docket No. 04-0131, issued June 30, 2005.
[3] See Decision and Order No. 23413, Docket No. 2006-003, issued May 3, 2007.

Companies propose that any deferred AMI Project MDMS software development costs also be amortized over 12 years, which is consistent with the amortization periods previously approved by the Commission for other software development projects. The HECO Companies are not aware of how software development costs have been treated or the amortization periods used by other state commissions and the FERC. See the response to part a. above for further discussion.

PUC-IR-11

Ref: Cost Recovery; PUC-IR-III.4

On page 12 of Exhibit 24 of the Application, the HECO Companies describe that the agreement with Sensus to operate and maintain the AMI network constitutes a lease. The HECO Companies then request the Commission to provide assured rate recovery over the 15-year term of this agreement. Has the Commission provided similar treatment to other leases that the HECO Companies engage in? If not, why is this particular lease agreement meriting of assured cost recovery? How has lease recovery of this kind been treated by other state commissions and the FERC?

HECO Companies' Response:

The HECO Companies requested Commission assurance that the recovery of the AMI Network lease expenses be based on the lease payments, as they are paid, over the term of the lease agreement. Commission assurance that future ratemaking will be based on the lease payments would allow the Companies to record a regulatory asset for the difference between the straight-line lease expenses required to be recorded under Generally Accepted Accounting Principles ("GAAP"), as described on page 13 in Exhibit 24 of the Application, and the actual lease payments made under this agreement. Commission assurance would, in effect, allow the HECO Companies to recognize lease expense in an amount equivalent to the actual lease payments made in that period (i.e., expense recognition will conform to the requested rate-making treatment).

The Commission has approved similar treatment for HECO's King Street building operating lease. In the HECO 2005 test year rate case, Docket No. 04-0113, the parties agreed in their Stipulated Settlement Letter (September 16, 2005), that for ratemaking purposes, the lease rent expense included in the test year revenue requirements should be based on the actual lease rent paid. The Commission, in Decision and Order No. 24171, found that basing the test year

estimate for the operating lease on the lease payment amount, rather than on the straight-line amount for the term of the lease, would be reasonable. The HECO Companies are not aware of how operating lease payments have been treated by other state commissions and the FERC.

PUC-IR-12

Ref: Cost Recovery; PUC-IR-III.5

On page 14 of Exhibit 24 of the Application, the HECO Companies propose "for ratemaking purposes... to include the lease expense in revenue requirements for the AMI Surcharge, but to exclude the imputed debt and annual rebalancing costs for purposes of calculating the AMI Surcharge revenue requirements." With respect to this request:

a. Why should imputed debt and rebalancing cost be included in the lease revenue requirement but excluded from the AMI Surcharge revenue requirement calculations? How have these items been treated in the past by the Hawaii PUC, other state commissions, and the FERC?
b. Does omitting the imputed debt and rebalancing costs for purposes of calculating the AMI surcharge revenue requirement affect the debt equity ratio and overall rate of return, and if so, to what extent?
c. Does this treatment of imputed debt and rebalancing costs affect the overall revenue requirement compared to including them in the AMI Surcharge revenue requirement, and if so, to what extent?

HECO Companies' Response:

a. In calculating the revenue requirement of this Project, the Companies attempted to capture all incremental costs associated with the Project. These costs include the incremental capital structure rebalancing costs resulting from the debt imputed by rating agencies as a result of the lease obligation. Therefore, the incremental imputed debt and the associated rebalancing costs are included in the calculation of the total revenue requirement in order to capture and reflect the total incremental costs of the project. While this represents an incremental project cost, the HECO Companies do not propose to include this cost in the AMI Surcharge. Therefore, the incremental costs related to the imputed debt impact from this project will not be recovered from customers through the AMI Surcharge. A company's cost of capital approved by the Commission in a rate case proceeding would reflect the impact of total aggregate imputed debt in the form of an increased proportion of equity in that company's capital structure. Increasing the proportion of equity would increase the

overall cost of capital. Effectively, the impact of imputed debt is reflected in the capital structure and the cost of capital. Therefore, exclusion of the imputed debt and rebalancing costs from the revenue requirement for purposes of determining the AMI Surcharge prevents excess recovery of these costs from customers.

b. No. As described in the Companies' response to PUC-IR-13, the Companies will utilize the incremental cost of capital and capital structure approved by the Commission in the most recent rate case interim or final order for each company. The cost of capital and capital structure to be used in the calculation of the revenue requirement for purposes of determining the AMI Surcharge will not be adjusted or revised to reflect the inclusion or exclusion of the incremental imputed debt associated with the lease obligation of the AMI Project. The incremental imputed debt impact from this project and the impact on the respective Company capital structure and cost of capital are not considered in isolation in this docket. How imputed debt is taken into consideration in evaluating the cost of capital is more appropriately addressed in a general rate case proceeding.

c. As described on page 14 of Exhibit 24 of the Application, the annual rebalancing costs are approximately $642,000 for HECO in 2011, $142,000 for MECO in 2014 and $189,000 for HELCO in 2015. The rebalancing costs will decline over the term of the lease agreement.

PUC-IR-13

Ref: Cost Recovery; PUC-IR-III.6

On page 8 of Exhibit 22 of the Application, the HECO Companies propose to utilize a capital structure that is 3% short term debt, 36% long term debt, 7% preferred stock, and 54% common stock. It proposes to use rates of 6% for short term debt, 6.5% for long term debt, 8% for preferred stock, and 12% for common stock. With respect to this proposal:

a. Is the proposed capital structure consistent with that proposed in the HECO Companies' most recent general rate case? If not, what accounts for or justifies the difference?

b. Are the proposed rates for short term debt, long term debt, preferred stock, and common stock consistent with those proposed in the HECO Companies' most recent general rate case? If not, what accounts for or justifies the difference?

c. Should the return used to calculate the surcharge be less than the overall return authorized by the Commission in the last rate case to reflect certainty of recovery and earlier recovery than under base rate treatment?

HECO Companies' Response:

a. The capital structure provided on page 8 of Exhibit 22 of the Application reflects the capital structure assumption utilized in calculating the incremental net revenue requirement of the AMI Project. As explained in Section 3, page 3 of Exhibit 22, the Companies generally utilize this capital structure in their analyses of long-term projects. The Companies are not proposing to use this capital structure for their actual surcharge calculations. This capital structure is based on the Companies' forecast of the incremental capital costs on average over a long-term period (10+ years). In order to maintain consistency in the calculation and present comparable revenue requirements, this capital structure was used in the calculation of the revenue requirements for all three of the HECO Companies. For purposes of calculating the actual surcharges, the Companies propose to utilize the incremental cost of capital and capital structure approved by the Commission in the most recent rate case interim or final order, for each company's calculation of the revenue requirements for inclusion in the AMI Surcharge.

b. See response to a. above.

c. No. As stated above, the Companies propose to utilize the capital structure and rate of return approved by the Commission in the last general rate case for each Company. The impact on investors' expectations of a fair return on their investment, with an approved AMI surcharge or other accelerated cost recovery mechanism, has not been quantified. There are other significant factors to consider in determining the overall risk to the Companies in determining a fair return; some factors offset the risk mitigation impact from the surcharge. The approval of a surcharge will demonstrate regulatory support and may mitigate some of the risk to the Companies from this project which would be included among the many considerations of a fair and reasonable return in future rate cases. The determination of a Companies cost of capital and investor rate of return is more appropriately addressed in a general rate case proceeding.

PUC-IR-14

Ref: Cost Recovery; PUC-IR-III.7.

To what extent would undertaking the AMI Project without the REIP Surcharge or a similar alternative adversely affect the HECO Companies? If undertaking this project in the absence of such a cost recovery mechanism occurs, how much would it likely decrease the HECO Companies' credit rating and increase the cost of capital for this project and for other capital projects?

HECO Companies' Response:

Due to the high capital costs of the AMI Project, undertaking the AMI Project without the REIP Surcharge, or a similar alternative cost recovery mechanism, may negatively impact investors' perceptions of risk. This could have a negative impact on the HECO Companies' current cost of capital and negatively impact credit quality. The rising capital requirements of electric utilities and the potential impacts of these requirements have been noted by Standard and Poor's ("S&P"), as described by Ms. Tayne Sekimura in HECO RT-20, page 23, lines 6-19, Docket No. 2008-0083, HECO's 2009 test year rate case.

In addition, Ms. Sekimura addressed the positive impact of the REIP Surcharge (or a similar alternative) on credit quality. "The REIP/CEI Surcharge will demonstrate regulatory support and result in more immediate cost recovery which could reduce investors' perceptions of risk."[1] Also, "This may help to maintain credit quality and cost of capital, and mitigate the potential degradation in credit quality caused by increasing capital requirements."[2]

Further, S&P's view is that regulatory support for mechanisms which provide for timely cost recovery and help address the issue of rate case lag is supportive of utility creditworthiness.

[1] HECO RT-20, page 22 line 25, page 23 lines 1-2, Docket No. 2008-0083.
[2] HECO RT-20, page 23, lines 3-5, Docket No. 2008-0083.

Please see the Companies' response to CA-IR-26, part c, for further discussion. Also, please see response to CA-IR-447 (d), filed in Docket No. 2008-0083.

The HECO Companies have not quantified or determined the impact of this project or other projects on their credit ratings or cost of capital.

PUC-IR-15

Ref: Cost Recovery; PUC-IR-III.8

Is the use of the proposed TOU rates expected to have any overall revenue effect? Is the aggregate amount of power consumed expected to change and, if so, by how much? Is the aggregate cost of electric generation expected to change, presumably due to shifting load patterns and changing dispatch? Please quantify such effects.

HECO Companies' Response:

The proposed TOU rates are optional rates, and the HECO Companies do not know the extent to which they will be subscribed and what the profile of the participation will be. For example, if new TOU customers are able to modify their consumption patterns, they should be able to reduce their electric bills and reduce utility company revenue. The aggregate amount of power consumed may or may not change depending on whether TOU customers reduce consumption or simply shift consumption; the HECO Companies do not know how consumption patterns might be modified under the optional TOU rates. The aggregate cost of electric generation could change if load patterns change; in the short-term, shifting load patterns could change total fuel and purchased power energy expense, and in the longer-term, shifting load patterns could defer and reduce the future cost of electric generation. However, the HECO Companies are not able to quantify this effect because we are not able to quantify participation in TOU rate options.

PUC-IR-16

Ref: Cost Recovery; PUC-IR-III.9.

Are AMI Meters expected to reduce overall energy consumption? If so, please explain how they would reduce overall energy consumption and quantify the amount as well as the aggregate ratepayer savings.

HECO Companies' Response:

The new electronic AMI meters conserve energy consumption in that they have no moving parts which tend to bind and drag with age. On the other hand, their reduction in energy use is expected to be insignificant. However, the AMI meters are more accurate than the aged electro-mechanical meters. Electro-mechanical meters tend to run slow over time, resulting in lost recognition of the full energy use. Replacing an electro-mechanical meter with an AMI meter will ensure that the utilization is more accurately measured, recorded and charged to the correct customer. As the accuracy in the energy metering increases, the system losses will decrease. The Companies performed a study to evaluate and quantify the estimated meter accuracy improvement due to the installation of the AMI meters. The results from the study are presented in Exhibit 16 of the application.

The calculations determining the estimated meter accuracy customer benefits to the customer are included in the Companies' response to CA-IR-2, Attachment 1, Section XI.C. A detailed narrative describing the calculations is included in the Companies' response to CA-IR-2, Attachment 2, Section XI.C. An updated table showing customer benefit, from improved meter accuracy is provided in the Companies' response to CA-IR-35, Attachment 1, Table 12.